



Maine Department of Environmental Protection
Bureau of Land and Water Quality
March 2008
O&M Newsletter

A monthly newsletter for wastewater discharge licensees, treatment facility operators and associated persons

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Operator Certification Renewals

Certified Operators who have even numbered certificates should have renewed their certifications by March 1, 2008. If we did not hear from you by March 1, 2008, your certification will become inactive. If you are the operator in responsible charge of your treatment facility, it will be illegal for you to sign the DMR or Form 49 until you reactivate your certificate.

For Practice

1. If the supernatant from an anaerobic digester has a high BOD content, how will it most likely affect the activated sludge aeration basin?
 - a. Increase the DO level.
 - b. Increase the MCRT.
 - c. Increase the F/M ratio.
 - d. Increase the removal efficiency.
2. The concentration of dissolved oxygen that may be held in water
 - a. decreases as temperature increased
 - b. decreases as temperature decreases
 - c. is independent of temperature
 - d. increases as temperature increases
3. The type of solids that is the easiest to remove using a standard biological treatment process is.
 - a. Organic dissolved
 - b. Inorganic dissolved
 - c. Organic suspended
 - d. Inorganic colloidal
4. The best description of new activated sludge floc is
 - a. Young, poor settling, underoxidized
 - b. Young, good settling, clear effluent
 - c. Old, rapid settling, overoxidized
 - d. Old, poor settling, underoxidized

Approved Training

March 19, 2008 in Kennebunkport, ME - Why & Where to Consider Low Pressure Sewers – Sponsored by JETCC – Approved for 6 hours

March 20, 2008 in Biddeford, ME - QA/QC for TSS And BOD – Sponsored by MRWA – Approved for 3 hours



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March 20, 2008 in Brewer, ME - Why & Where to Consider Low Pressure Sewers – Sponsored by JETCC – Approved for 6 hours

March 25, 2008 in Jay, ME - Mapping for O&M, Capitol Improvements & Transition to GIS – Sponsored by JETCC – Approved for 6 hours

March 26, 2008 in Presque Isle, ME - QA/QC for TSS And BOD – Sponsored by MRWA – Approved for 3 hours

March 31 & April 1, 2008 in Portland, ME - Reducing Energy Costs - Sponsored by Efficiency Maine – Approved for 16 hours

April 10, 2008 in South Portland, ME - Everyday Labware with BOD Review – Sponsored by JETCC – Approved for 6 hours

April 15, 2008 in Yarmouth, ME - Math Review – Approved for 6 hours – Sponsored by JETCC – Approved for 6 hours

April 16, 2008 in Augusta, ME - ENERGY STAR Benchmarking for Wastewater Treatment Facilities – Sponsored by Energy Maine – Approved for 3 hours

April 17, 2008 in Bangor, ME - Everyday Labware with BOD Review – Sponsored by JETCC – Approved for 6 hours

May 22, 2008 in Orono, ME - Advanced Microsoft Excel – Sponsored by JETCC – Approved for 6 hours

Note: Efficiency Maine is a program of the Maine Public Utilities Commission - 18 State House Station, Augusta, ME 04333-0018 Tel: 207-287-8350

JETCC stands for Joint Environmental Training Coordinating Committee – PO Box 487 – Scarborough, ME 04070-0487 – Tel (207) 253-8020

MRWA stands for Maine Rural Water Association - 14 Maine Street, Box 36 - Brunswick, ME 04011 – Tel (207) 729-6569

NEIWPC stands for New England Interstate Water Pollution Control Commission – 116 John St. – Lowell, MA 01852-1124 – Tel (978) 323-7929

Clean Water Needs Survey Seminar

We are starting another Needs Survey in 2008. During this survey, you have the opportunity to assist us with data entry or validation, if interested.

This survey is very important, since it is expected that the Needs reported will be used to determine what percentage of future Federal grant monies are available to the state for SRF loans.

After reading the following, if interested, please log into the seminar.

If you have any questions, please feel free to contact David Breau at (207)287-7766 or by e-mail at david.p.breau@maine.gov.



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Subject: ANNOUNCING: Clean Watersheds Needs Survey (CWNS) 2008 Web Training Seminars for Community Stakeholders

Please pass along this information to others who might be interested...

CWNS 2008 Web Training Seminars for Community Stakeholders

What is the Clean Watersheds Needs Survey (CWNS)?

The Clean Watersheds Needs Survey (CWNS) is a comprehensive assessment of the capital needs to meet the water quality goals set in the Clean Water Act. Every four years, the states and EPA collect information about: publicly owned wastewater collection and treatment facilities; stormwater management projects; combined sewer overflows (CSOs) control facilities; nonpoint source (NPS) pollution control projects; and decentralized wastewater management. This information is used by EPA to in a Report to Congress and by state and local governments to support budgeting and planning. More information about CWNS is available at <http://www.epa.gov/cwns> or by e-mailing cwns@epa.gov.

How can you help your state accurately report needs?

Data collection for CWNS 2008 is currently underway. States rely on a variety of resources, including Community

Stakeholders, to gather the information to accurately report needs to EPA. Community

Stakeholders can include representatives of:
Wastewater treatment plants

Municipal stormwater programs
Municipal health departments
And many others
Planning authorities
Service providers
Watershed organizations

These Community Stakeholders can provide their State with valuable information about the needs and technical information for their facilities and projects.

How can you learn more?

EPA is offering three Web Seminars in March aimed at providing Community Stakeholders the information they need to support their state's CWNS data entry effort:

Wednesday, March 12 at 10:30-12:30 ET
Tuesday, March 18 at 1:00- 3:00 ET
Monday, March 24 at 2:00-4:00 ET

Note: Each Web Seminar will cover the same content. Please register for only one.

How can you register?

1. Go to:
<http://hawkeye.epa.gov/imtapp/app/pubschconf.uix>
2. Select Filter by "Conference Title", type in "CWNS", and select 'Go'.
3. The list of CWNS Web Seminars should be listed. The Local User seminars are titled "CWNS 2008: Community Stakeholder Training."
4. Chose your preferred time and click on the (Embedded image moved to file: pic08373.jpg) (icon of a briefcase) in column "Join or Enroll for Conference." This opens the registration screens.



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5. Enter your name, email address, company/organization name, address, and phone number. Then click "Enroll for Conference."
6. You are redirected to a page confirming your registration.

Answers to *For Practice*:

1. c – Increasing the BOD increases the food available to the microorganisms. Thus, the F:M (Food:Microorganism) ratio will increase
2. a – The ability of water to hold dissolved oxygen decreases as the temperature increases. Warm water holds less oxygen than cold water.
3. d – Dissolved organic solids are absorbed quickly by the microorganisms. Organic suspended solids are adsorbed to the microorganisms but must be broken down by enzymes before they can be absorbed. Inorganic dissolved solids are not removed by settling but are not, usually, taken up by the microorganisms. Colloidal inorganic solids are very difficult to remove because they do not settle and are not readily adsorbed by the microorganisms.
4. a – New activated sludge floc is made up of young cells that settle poorly and are underoxidized..

***EPA and Energy Maine Sponsor
Energy Star Benchmarking for
Wastewater Facilities Class***

The Energy Maine and the Region 1 Office of the Environmental Protection Agency are sponsoring a three-hour training class on the Energy Star Benchmarking Tool for wastewater treatment facilities on April 16 in Augusta. The workshop will provide interactive instruction on entering energy use information into the ENERGY STAR benchmarking tool. You will leave with a benchmark ranking from 1-100 letting you know how well your facility performs from an energy standpoint.

Participants need to bring the following information (for averages, bring the annual average):

1. Average Influent Flow
2. Design Flow (MGD)
3. Average Influent Biological Demand (BOD) Concentration: (mg/l)
4. Average Effluent Biological Demand (BOD) Concentration: (mg/l)
5. Whether you have Fixed Film Trickle Filtration Process: Yes/No
6. Whether you have Nutrient Removal: Yes/No
7. Your Facility Zip Code
8. Energy use for each meter or bill received at the facility in both the units used on the bill (kWh, therms, etc.) and dollar cost. Possible billing or meter types include electric, natural gas, diesel, propane, liquid propane, steam, fuel oil types 1-6, coal, coke, chilled water, kerosene, wood, or other.



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New DMR Format

Part of the implementation of the Electronic Discharge Monitoring Report (eDMR) system will include a minor change to the paper DMR form. You will probably remember back a few years when we changed from the multi-part DMRs to the single, laser printed DMRs we use now. The new DMRs will also be laser printed, but will have a slightly different format.

The current DMRs have two columns for Quantity Limits and three columns for Concentration Limits. The new format will have three columns for Quantity Limits and three columns for Concentration Limits. If you are required to report monthly average, weekly average and daily maximum quantities for BOD and TSS, you can report them on one line of the new DMR rather than on two lines as you have to do with the current DMR format. The pictures on the following page show the old and new DMR formats.

Your limits will not change and the parameters you are required to report will not change. The only thing different is where you put the numbers. You should expect to see the new DMR format when you receive the March DMRs.

PERMITTEE NAME/ADDRESS (Include Facility Name & location if Different)		NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)	
Name	BREWER, CITY OF	ME 04412	MAJOR
Address	80 N. MAIN STREET		(SUBR BA)
	CITY HALL		F - FINAL
Facility	BREWER		SECONDARY TREATED WASTEWATERS
Location	BREWER WWTF		EFFLUENT
ATTN: KENNETH LOCKE			*** NO DISCHARGE ***
		ME 04412	CGT
		FROM 07 10 01 TO 07 10 31	
		PERMIT NUMBER ME0100072	DISCHARGE NUMBER 001 A
		MONITORING PERIOD	
		YEAR MO DAY YEAR MO DAY	
		07 10 01 07 10 31	

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING		QUALITY OR CONCENTRATION			UNITS	ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM			
BOD, 5-DAY (20 DEG. C) 00310 W 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	1947	*****	*****	*****	*****	*****	WEEK-DAYS	COMP24
BOD, 5-DAY (20 DEG. C) 00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	1298	REPORT DAILY MX	30	45	50	MG/L	WEEK-DAYS	COMP24
PH	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	DAILY	GRAB
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	DAILY	GRAB
SOLIDS, TOTAL SUSPENDED 00530 W 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	1947	*****	*****	*****	*****	*****	WEEK-DAYS	COMP24
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	1298	REPORT DAILY MX	30	45	50	MG/L	WEEK-DAYS	COMP24
SOLIDS, SETTLEABLE 00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	DAILY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	5.19	*****	*****	*****	*****	*****	CONTINUOUS	*****

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE
TYPED OR PRINTED		AREA CODE	NUMBER YEAR MO DAY
COMMENTS AND EXPLANATION OF ANY VIOLATION (Reference all attachments here)			
FOR PARAMETER 50008 ENTER 1 FOR TESTING WAS DONE AND 0 FOR TESTING NOT DONE			

00817/071016-0722

1

This is an example of the Present DMR Format



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Saving Money through Energy Management, Part 2: Benchmarking Results and Next Steps

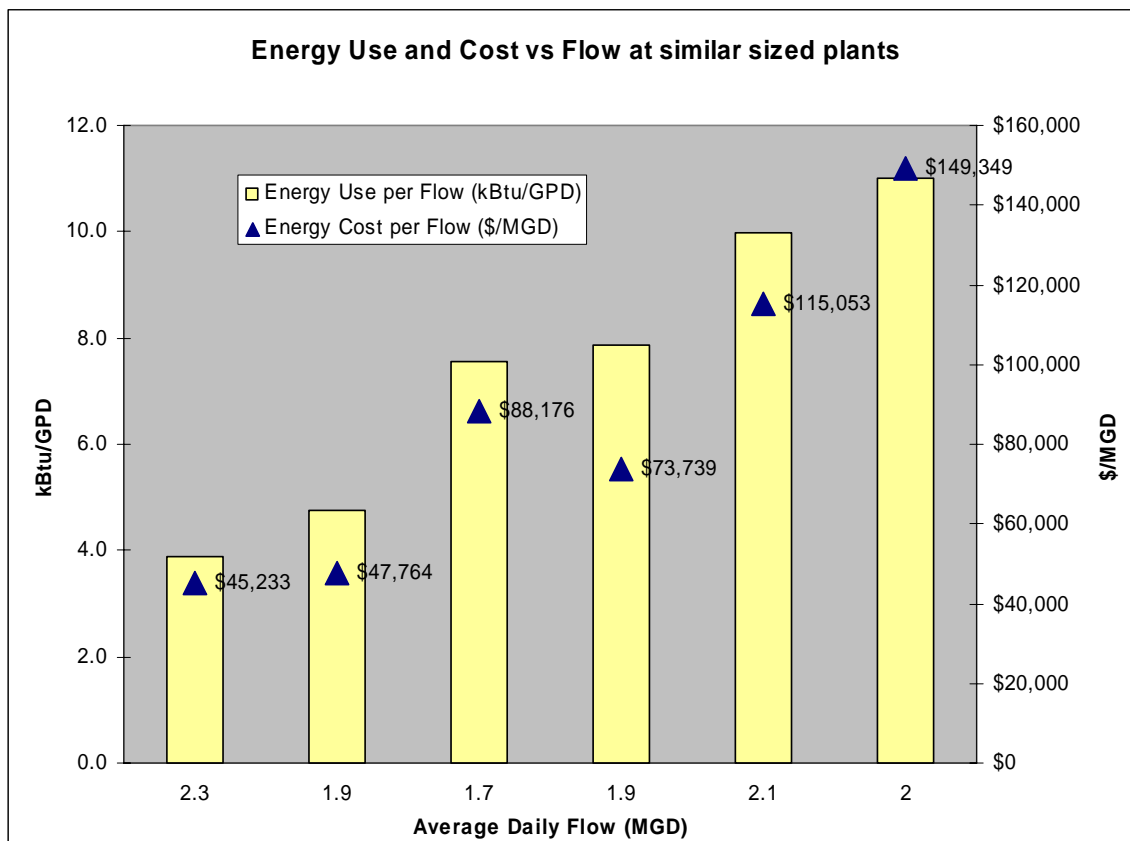
A Message from the EPA New England Energy and Transportation Team

Last fall, EPA wrote about the new ENERGY STAR Portfolio Manager benchmarking tool for Wastewater Treatment Facilities in this newsletter. Since then, eight Maine facilities have joined facilities around New England—more than 30 in all—to benchmark their energy filters aren't compared to large plants with advanced activated sludge processes. While the ranking gives you a good idea of where your plant stands, the second number is more important. This number is an actual breakdown of the energy used in your plant to treat one gallon of water per day (GPD). We use the unit of kBtu/GPD, which accounts for all sources of energy—heat and electric—used at your plant.

use. The results have been encouraging. Several of the facilities have scored very well in the benchmarking rankings. Other facilities with lower scores have been motivated to find ways to improve their energy efficiency.

When a facility benchmarks using the tool, the tool provides the operator with two important numbers. The first is a ranking from 1-100. The higher the ranking, the better a facility is performing. This ranking is designed to compare similar facilities to each other, so small plants with trickling

If you input power and heating costs into the tool, you can calculate the energy cost to treat one million gallons of flow per day (MGD). The results might surprise you. The chart below shows the results of several small plants we've benchmarked around New England. The bars represent energy use per flow, while the triangles represent energy cost per flow. Along the bottom are the sizes of the average daily flow of the facilities.





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You can see that there is a wide variation in the energy used by these plants to treat their influent. We find that this variation is only slightly dependent on factors like treatment process, sludge management technique, or the requirement to remove nitrogen. Instead, the real key to using less energy is *management*. Simply put, plants that pay attention to their energy use tend to use less energy.

It's often said that you can't manage what you can't measure. The Portfolio Manager benchmarking tool helps you measure your energy use and cost so that you can better manage it. To help you learn how to use the tool, we're offering training in collaboration with Efficiency Maine on April 16 in Augusta. There's also a full-day workshop on energy efficiency and renewable energy cosponsored by NEWEA on April 22nd in Lowell, MA. Details on how to sign up for both events are in the attached sidebar.

Once you've benchmarked, what should you do next? In part, that depends on your rating. Plants with a low score should consider an energy audit. A good energy audit should be done by a professional familiar with the processes used in wastewater treatment. Fortunately, there are nationally recognized private energy auditing firms specializing in wastewater plants right here in northern New England.

Some plants may have already performed energy audits in the past, but never found the time or capital to implement the suggestions. With energy prices on the rise and the costs of many efficient technologies falling, now is the time to revisit those old audits to see if the economics have changed. To help make the process even more affordable, energy upgrades may now

qualify for SRF loan funds. Many plants have found that by borrowing the capital for energy upgrades, they can see an immediate improvement in their operating budgets from lower energy costs that more than make up for the loan payments.

We hope to see you at the upcoming training, but if you can't attend or want to try it out first, just go to <http://www.energystar.gov/benchmark>. You will need to know your plant's average daily flow, design flow, average influent and effluent BOD concentrations, and have one year's worth of your plant's energy bills (electric, oil, gas, etc.).

If you need help with benchmarking, call Jason Turgeon at (617) 918-1637 or email turgeon.jason@epa.gov. The Energy and Transportation Team is also available to visit any facility in Maine to do a walkthrough of the plant and help benchmark on site.

For more information on the nexus between water and energy, visit: http://www.epa.gov/waterinfrastructure/bettermanagement_energy.html